

FINAL

CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT

Golub Corporation
Schenectady, NY

GENERAL INFORMATION

Stationary Source	Golub Corporation
Date of Inspection	May 11, 2011
USEPA Inspector	Francesco Maimone – USEPA, REGION II (Edison, NJ)
Contract Auditor	Neil Mulvey, OHC (Subcontractor)
Description of Activities	<ul style="list-style-type: none">• Opening meeting with facility representative.• Program audit.• Closing meeting with facility representatives. Program audit consisted of the following activities: <ol style="list-style-type: none">1. Document review.2. Field verification.3. Personnel interviews

STATIONARY SOURCE INFORMATION

EPA Facility ID #	1000 0014 9653
Date of Latest Submission (used for RMP inspection)	Receipt Date: July 30, 2009 (Correction) Anniversary Date: June 9, 2014
Facility Location	501 Duanesburg Road Schenectady, NY 12306 Schenectady County Tel. (518) 379-1280
Number of Employees	<i>RMP*Submit</i> states 590 employees (per RMP registration); facility reported over 900 employees on-site (includes corporate personnel) Non-Union workforce

Description of Surrounding Area	The facility is located on approximately 50 acres in a residential / commercial area of Schenectady, NY. Residential communities border the facility to the north and northwest. To the east the facility is immediately bordered by railroad tracks and a large industrial park, with residential further to the east. To the south lies an undeveloped wooded area. The nearest residential area is approximately 800-ft. northwest of the facility.
Participants	<p>Participants included: Francesco Maimone, USEPA – Region II, Edison, NJ Neil Mulvey, USEPA Contractor</p> <p><u>Golub Corporation:</u></p> <p>Dan Black – Refrigeration Technician Paul Lupe – Maintenance Manager * Jonathan Martin – Refrigeration Technician</p> <p>* Designated Risk Management Program Lead</p>

REGISTRATION INFORMATION

Process ID #	81220 – Ammonia Refrigeration
Program Level (as reported in RMP)	Program 3
Process Chemicals	Ammonia (anhydrous) @ 31,250-lbs.
NAICS Code	49312 (Refrigerated Warehouse & Storage)

GENERAL COMMENTS

The Golub Corporation is a private corporation that operates a large cold storage warehouse and distribution center in Schenectady, New York. The facility includes just under 1,000,000 square feet of warehouse space, including dry grocery and medium temperature perishable food storage. The facility distributes grocery and perishable foods to 118 Price Chopper supermarkets in six States.

Operations at the Schenectady facility include receiving, storage, distribution, trucking, a recycling center, and corporate offices. The company recently relocated approximately 600 employees from this location to new headquarters corporate offices in downtown Schenectady.

Operations also include an ammonia refrigeration system to provide refrigerated storage in several warehouse spaces. The refrigeration system utilizes anhydrous ammonia as a refrigerant. The refrigeration system operates 24 hours a day, 7 days a week. Important characteristics of anhydrous ammonia include:

- Colorless liquid or gas with pungent odor
- Acutely toxic
- Irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes; exposure to liquid or rapidly expanding gases may cause severe chemical burns and frostbite to the eyes, lungs, and skin.
- Weight – 5.15-lbs./gals. (@60 deg.F)
- Vapor density is lighter than air
- Boiling point is -28 deg.F (@ 1 ATM)
- Can form explosive mixtures in air
- Flammable range is 16 – 25 %

The ammonia refrigeration system includes:

- 5 Frick Compressors (three, 300 HP; one, 426 HP; and one, 150 HP)
- 1 high pressure receiver (HPR) (V-5) with thermosyphon (located outside engine room)
- 1 recirculator (V-1) to supply ammonia liquid pumps
- 1 suction trap (V-2)
- 1 recirculator (V-4) (located outside on roof)
- 3 evaporative condensers (located outside on engine room roof)
- 74 air handling units (located throughout refrigerated storage spaces)

The five compressors are located inside one engine room. Three to five compressors may operate during summer months with possibly only one compressor operating in the winter. The high pressure side of the refrigeration system typically operates at 140 PSIG.

The refrigeration system has been expanded several times over the past 10-years. Most recently, a new HPR (V-5) was installed in 2008. V-5 capacity is such that it can store a majority of the ammonia charge if necessary. This addition allows the facility to store all anhydrous ammonia within the engine room if necessary (i.e., in the event of a complete system shutdown).

The registered inventory of anhydrous ammonia (31,250-lbs.) is based on actual system charge records. Recent anhydrous ammonia charges to the system include:

- 3,000-lbs. in June 2010 to accommodate start-up of equipment in a new perishable warehouse
- 4,000-lbs. in June 2009 to accommodate start-up of equipment in a new perishable warehouse

Anhydrous ammonia is received from Tanner Industries. The registered inventory quantity matches the ammonia charge records. Facility management reported that they cannot recall ever adding ammonia to the system as make-up (i.e., due to system losses), rather only to accommodate the addition of new equipment.

The facility has an extensive network of anhydrous ammonia detectors as follows:

- 1 in engine room (25 PPM alarm setpoint)
- 1 detector in each of three manifold pressure relief headers (6000 PPM alarm setpoint)
- 1 detector in each cooler (i.e., refrigerated warehouse space); estimated 30 total (50 PPM or 200 PPM alarm setpoints)

Facility management explained that they are currently changing all existing solid state detectors to electrochemical detectors.

Ammonia detector alarms annunciate at the Front Gate (Golub security personnel staffed 24 hours a week, 7 days a week) and on a panel in the engine room with visible emergency warning lights at the entrance door to the engine room. The ammonia detector in the engine room will automatically start emergency ventilation fans and close the King valve (single king valve on main liquid supply line from HPR) if ammonia is detected above the setpoint. If ammonia is detected in one of the coolers, in addition to the alarms, a control valve on the ammonia liquid supply to that cooler will automatically close, isolating the potential release point from the ammonia supply.

Ammonia vessels V-1, V-2 and V-4 include oil drain pots to facilitate removal of oil from the system. Facility management reported that they typically only drain oil from the system once per year.

The system design includes an emergency ammonia refrigeration dump system. This system allows for a manual ‘dump’ of ammonia from the refrigeration system to the atmosphere. The system is available for use during a major emergency if/when it would be necessary to relieve ammonia to the atmosphere to avoid a more catastrophic accident. The system was originally designed to allow access by outside emergency responders.

The Maintenance Manager is responsible for all maintenance activities on-site, including general maintenance, grounds, electrical, janitorial, building, as well as the ammonia refrigeration system. Maintenance staff includes 18 employees. The refrigeration system is operated by three refrigeration technicians. A local refrigeration contractor (Mullally Brothers Inc.) provides maintenance support as requested. The refrigeration technicians are on-call 24 hours a day, 7 days a week, but are typically on-site during the day shift. The refrigeration process can be monitored from computer screens located at the Front Gate and in the engine room. System operating parameters can be adjusted remotely via personal computers by facility operators, Mullally Brothers Inc., and Logic Technologies (anhydrous ammonia computer system contractor).

RISK MANAGEMENT PROGRAM DOCUMENTATION

Risk Management Program documents are contained in various manuals, files, and reports, mostly located in the Maintenance Manager's office. Documents and records were readily available upon request. Facility management demonstrated an excellent understanding of Risk Management Program requirements, the facility's Risk Management Program documentation, and program implementation. During the interview process, it was apparent that the Maintenance Manager, as well as the two Refrigeration Technicians present, were well versed in the facility's Risk Management and process safety programs and procedures.

An outside contractor (AcuTech, Inc.) was initially used to develop the Risk Management Program. The facility continues to seek input from third party experts.

Registration

Because the facility anhydrous ammonia is a Risk Management Program toxic substance, and is also regulated by the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Rule, the facility has correctly registered the anhydrous ammonia process as an Environmental Protection Agency (EPA) Prevention Program Level 3.

The facility's Risk Management Plan, submitted to the EPA on July 27, 2009, indicated that the facility is registered for 31,250-lbs. of anhydrous ammonia storage. Because the facility added approximately 3,000-lbs of anhydrous ammonia in June 2010 for charging new equipment in a new perishable warehouse, it is recommended that the facility submit a correction in RMP* to reflect the current maximum anhydrous ammonia storage amount at the facility.

Management System [40 CFR 68.15]

A written Management System description was on-file and available for review. According to the facility's Management System documentation, the Vice President is responsible for developing and implementing the Risk Management Program at the facility. Specific Risk Management Program elements such as Process Safety Information (PSI), Process Hazard Analysis (PHA), Standard Operating Procedures (SOP), Training, Contractor Safety, Pre-Startup Review, Management of Change, Mechanical Integrity, Hot Work Permit, Compliance Audits, Hazard Assessment, and the Risk Management Plan, are delegated to the Maintenance Manager. Emergency Response and Employee Participation are delegated to the Risk Management Team. The facility's Management System structure appeared well implemented throughout the inspection.

Hazard Assessment [40 CFR 68.20-68.39]

The facility used the EPA's Risk Management Program Guidance for Ammonia Refrigeration Facilities in order to determine distance-to-endpoint estimates for its Worst Case (WC) and Alternate Case (AC) scenarios.

The facility's WC and AC distance-to-endpoint estimates were 1) input into MARPLOT maps for determining public and environmental receptors within each distance-to-endpoint, and 2) used in Landview 6 (Census 2000 data) to determine potentially impacted population estimates. The WC and AC scenario descriptions and assumptions, parameters input in models, distance-to-endpoints, and potentially impacted residential population and environmental receptor information were appropriate to the facility's operations and location.

During the inspection, it was identified by the EPA that the facility's July 27, 2009 Risk Management Plan had a data entry error for the AC scenario release rate. This error was corrected in the facility's Risk Management Plan Correction, posted on July 5, 2011. The EPA appreciates your facility's effort to promptly correct this data entry error.

Please note that the facility is reminded that it must use Census 2010 data in its next 5-Year Hazard Assessment review and update. Census 2010 data is now integrated into newer versions of MARPLOT, thus eliminating the need for Landview to obtain population estimates. The newest version of MARPLOT can now be downloaded at: <http://www.epa.gov/osweroel/content/cameo/marplot.htm>

Process Safety Information (PSI) [40 CFR 68.65]

The Risk Management Program included a written description of PSI, dated 8/4/04.

The facility maintains extensive process safety information, including:

- MSDS for anhydrous ammonia
- Mass Energy / Block Flow Diagram
- Piping and instrument diagrams (P&IDs)
- Electrical classification (citation of ANSI/ASHRAE 15-2001, section 8.12(h))

The P&IDs are detailed, including the following information:

- Equipment model / serial numbers
- Material of construction
- Maximum design temperature / pressure
- Anhydrous ammonia capacity
- Safety system description
- For Pressure Safety Valves (PSV): manufacturer, inlet/outlet sizes, set pressure

Information regarding safe operating limits and consequences of deviating from safe operating limits are included in written operating procedures.

The facility retains a document, dated 11/17/94, which provided a list of several industry standards that were consulted during the initial design, fabrication, and installation of the anhydrous ammonia process. Although the facility references IIAR Bulletin R1 1983 (general anhydrous ammonia information) for a perishables warehouse expansion in 2008, the facility did not retain a *current* evaluation of the anhydrous ammonia system's conformance with Recognized and Generally Accepted Good Engineering Practices (RAGAGEP).

An evaluation of the facility's engine room ventilation system design was not available for review during the inspection. Following the inspection, the facility provided a sufficient ventilation system evaluation, dated May 18, 2011.

Process Hazard Analysis (PHA) [40 CFR 68.67]

The three most recent PHA reports available for review were:

- The initial PHA conducted by a third party consultant (AcuTech, Inc.) in November 1994 – excellent report of PHA; PHA included 73 preliminary recommendations.
- PHA Revalidation in August 2001 performed by third party consultant (Compliance & Engineering Services) – comprehensive “What-If/Checklist” analysis; included appropriate team members; identified 22 preliminary recommendations; documentation of resolution of recommendations on file for review.
- PHA Revalidation 2006 performed by third party consultant (Compliance & Engineering Services) – comprehensive “What-if/Checklist”; included appropriate team members and recommendations with resolutions.
- PHA Revalidation conducted in March 2008 as part of major MOC review (MOC #9-2008) – performed by third party consultant (Compliance & Engineering Services) using the “What-If/Checklist” method; included a review of the entire process (15 subsystems), including process equipment, ammonia charging, pump-out, human factors, facility siting, and past incidents; included appropriate team members, including Maintenance Manager and all three Refrigeration Technicians; identified 17 preliminary recommendations; documentation includes tracking and resolution of each recommendation.

Standard Operating Procedures (SOPs) [40 CFR 68.69]

The facility maintains detailed SOPs in three binders. The SOPs are equipment specific, with each SOP containing the following information:

- Purpose
- Equipment description
- Operator requirements
- References
- Special safety & health considerations
- Safety system description
- Step-by-step procedures; valve and equipment specific
- Tables of safe operating limits and consequences of deviation

The SOPs address various applicable operating phases such as:

- initial start-up
- normal operation
- temporary operation
- emergency shutdown
- emergency operation
- normal shutdown
- start-up after emergency shutdown

However, for older equipment, including air handling units (AHUs) number 1 through 40, there are no equipment specific SOPs.

The most recent SOP annual certification was completed on 4/27/11, with prior certifications completed on 11/17/10 and 9/23/09. The annual certification is very general and states: “I certify that the operating procedures are complete and accurate.” This certification statement is not linked, nor does it reference the actual SOPs duly certified. The facility should consider a more “SOP-specific” annual certification.

Training [40 CFR 68.71]

The three anhydrous ammonia operators are former Mullally Brothers Inc. employees who had previously performed contract work at the facility. Two of the three anhydrous ammonia operators (Daniel Black and Michael Flannery) began working on the regulated process prior to June 21, 1999. A third operator, Jon Martin, began working at the facility approximately one year prior to the inspection.

Facility operators receive training through the Northeast Chapter of the Refrigeration Engineering Technician Association (RETA). Facility personnel indicated that operators are kept up-to-date on ammonia refrigeration practices and technologies through these training courses.

Initial and refresher training for the anhydrous ammonia operators consists of a combination of prior work experience as a Mullally Brothers Inc. contractor at Golub Inc., required anhydrous ammonia certifications, and an annual review of standard operating procedures. The annual review of standard operating procedures includes a review operating procedures for each system component, a review of all P&IDs and process flow diagrams, and line breaking procedures. Records of several anhydrous ammonia-specific training were reviewed.

As referenced above, initial and refresher training consists of several elements; however, initial and refresher training requirements have not been defined by the facility. As a result, there was no documentation indicating that each operator has successfully completed initial and/or refresher training requirements for the facility's anhydrous ammonia system.

Mechanical Integrity [40 CFR 68.73]

The facility has a well developed mechanical integrity program. The program is work order driven and includes planned inspections / tests of ammonia refrigeration equipment and instruments. The following equipment was randomly selected to verify inspections and tests:

- Compressor high pressure / low suction cutouts – performed annually
- Ammonia vessel high level cutouts – performed annually
- Pressure Safety Valves (PSV) – replaced every 5-years
- Ammonia detector / interlock to shutoff ammonia supply to coolers – performed annually
- Ammonia detector / interlock to shutoff King valve – performed annually

Work order documentation included:

- Equipment identifier
- Date of inspection / test
- Name/initials of who performed inspection / test
- Results

A review of these inspection and test records did not identify compliance issues.

Management of Change (MOC) [40 CFR 68.75] & Pre-Startup Review (PSR) [40 CFR 68.77]

The Risk Management Program includes written procedures for MOC & PSR, including forms to document each. A review of MOC records shows active implementation of the MOC/PSR program and includes extensive documentation of the changes. A PSR checklist is completed for every MOC review. The PSR checklist includes a

comprehensive set of health and safety questions. The MOC and PSR documents reviewed include appropriate internal authorizations.

As described above, the facility has a program underway to replace all existing solid state ammonia detectors with electrochemical detectors. Facility management explained that they have not completed a MOC for this change. The facility has determined that replacement of solid state detectors with electrochemical detectors is a replacement-in-kind, and therefore no MOC is required. While the different ammonia detectors have the same design intent, they clearly have different design and operating features, and as a result, is not a replacement in kind. These differences can result in likely updates to the facility PSI, Mechanical Integrity, Operator Training, and possibly to SOPs. As a result, the EPA believes that a MOC is required for the replacement of solid state ammonia detectors with electrochemical detectors.

Compliance Audits [40 CFR 68.79]

The facility has a written “PSM Compliance Audit” procedure (Rev. 3/8/05). The most recent compliance audit was conducted on 7/24/09 and 12/22/09. The audit was lead by a third party consultant (Compliance & Engineering Services), and included written certification statements by Golub’s Maintenance Manager. Facility personnel were included on the audit team. The audit included completion of a comprehensive process safety checklist. Seven recommendations were identified, including documentation of the resolution of each recommendation.

The prior audit was conducted in September 2006, which was also conducted by the third party consultant and included a comprehensive process safety checklist. Earlier audit reports were also available for review.

Incident Investigation [40 CFR 68.81]/ Five-Year Accident History [40 CFR 68.42]

The facility has written procedures for Incident Investigation and Five-Year Accident History. These procedures were detailed, and ensured that incident investigation recommendations are resolved and tracked in a timely manner. The incident investigation procedures also trigger MOCs when changes to the process occur as a result of incident investigation findings.

The facility’s Incident Investigation procedures reference boiler-plate forms to be completed should an applicable incident occur. These forms were not located with the facility’s Incident Investigation procedures during the inspection. It is recommended that these boiler-plate forms be included with the facility’s Incident Investigation procedures so that they are easily available when/if needed.

Interviews with facility personnel and a review of the facility’s Risk Management Program indicated that there have been no incidents that would have required implementation of Incident Investigation procedures and/or Five-Year Accident History reporting.

Employee Participation [40 CFR 68.83]

The facility has an elaborate Employee Participation policy. This policy is divided into three main areas:

- Employee Awareness
- Employee Involvement/Participation
- Employee Access to Information

The facility's Employee Participation policy stresses the importance of giving employees and contractors access to Process Safety Management/Risk Management Program documentation. The policy also states that employees are included during the development of PHAs and other PSM-related documents, and that operators are encouraged to discuss safety concerns with the Facilities Maintenance Manager.

The facility implements its Employee Participation policy through meetings, including operators in PHA revalidations, requiring operators to review SOPs annually, and providing access to PSM/RMP documents in the Facilities Maintenance Manager Office.

Although the facility is not union-represented, the facility identified two operators as employee representatives for purposes of the Risk Management Program Inspection. These two operators confirmed receipt of the EPA's May 5, 2011 Risk Management Program Pre-Inspection Letter.

Hot Work Permit [40 CFR 68.85]

The facility has Hot Work Permit procedures, and documents Hot Work on the FM Global Hot Work Permit template. The facility's Hot Work Permit included fields for identifying the item and area to receive hot work, start and expiration times, and several fire safety checklist items.

A Hot Work Permit, dated November 26, 2007, was reviewed for hot work performed by Mullally Brothers Inc. This Hot Work Permit demonstrated excellent implementation of Hot Work Permit procedures.

Contractor Safety [40 CFR 68.87]

The facility has a Contractor Safety Program that is implemented through completion of the following three forms:

- CQ-1: Contractor Qualifications and Reference Questionnaire
 - Contractor Selection Process, prior to beginning work
 - Includes: Safety Ratings, including Experience Modification Rating, Accident Experience (OSHA Form 200), Safety Programs, PSM/RMP experience
- CQ-2: Contractor Employee Acknowledgment Record
 - Prior to beginning work

- Contractor acknowledgement that the contract employee is sufficiently trained, and was explained facility safety, fire, personal protective equipment, hot work permits, and ammonia hazards and policies
- CQ-3: Contractor Employee Training Evaluation Inquiry
 - Completed after Contractor work is completed
 - Includes: general assessment of contractor training, tracking of contractor injuries, list of names of contract employees

CQ-1, CQ-2, and CQ-3 forms were reviewed for contractor work performed in 2010 and 2011.

The facility's main anhydrous ammonia contractor, Mullally Brothers Inc., has a long-established history of performing contract work at or near the anhydrous ammonia process. Facility personnel indicated that this contractor has assisted with a wide range of anhydrous ammonia projects, ranging from adding anhydrous equipment to the facility's registered process, changing out Pressure Safety Valves (PSV), and assisting on an as-needed basis when Golub operators are busy.

Although the facility has a means of evaluating contractor anhydrous ammonia and safety training through implementation of the CQ forms, the EPA believes that the facility's Contractor Safety program could be bolstered with minor improvement. It is recommended that the facility 1) request contractor anhydrous ammonia training policies and procedures, and 2) request that contract owners provide the certification status of their employees prior to beginning contract work.

Emergency Response [40 CFR 68.90 – 68.95]

The facility has an extensive Emergency Response Program, and has identified itself as a first-responder upon a release of anhydrous ammonia. The facility has implemented emergency response procedures, ensured methods to notify the National Response Center and other state and local response agencies upon accidental releases, and maintains an Emergency Response Truck.

The facility has fourteen Emergency Response Team members. These Emergency Response Team members are given general anhydrous ammonia awareness training, and are also trained on specific anhydrous ammonia release scenarios and procedures. The three anhydrous ammonia operators are members of the fourteen-person Emergency Response Team. The facility performs bi-annual (Spring & Fall) emergency response drills with the Schenectady Hazmat Team. These drills include the donning of Self-Contained Breathing Apparatuses (SCBA) in Level A suits. As of the date of inspection, the most recent drill was performed approximately one week prior to the Risk Management Program inspection.

Emergency Response Team members receive annual medical monitoring and SCBA respirator fit-testing. The facility currently maintains and owns eight SCBAs. A documented visual inspection of the facility's emergency response equipment is

performed monthly, and the facility employs the services of a private firm to test the integrity of the SCBA cylinders and SCBA equipment.

The facility's Emergency Response Plan is reviewed at least annually by facility personnel. As of the date of the inspection, the facility's Emergency Response Plan was undergoing revisions due to recent building changes, such as the new front gate house. The facility's Emergency Response Plan included appropriate first aid care information and evacuation information.

TIER II

The facility reported its chemical storage for Year 2010 on February 24, 2011 in E-Plan. The facility's Year 2010 Tier II form was reviewed.

FACILITY TOUR

Several items noted during the facility tour include:

- Insulation on tanks and ammonia lines was generally observed to be in good condition.
- Facility housekeeping was good.
- Ammonia equipment (vessels and lines) was well labeled, showing contents and direction of flow.
- Facility emergency response vehicle appeared to be well equipped and capable of providing support in the event of an emergency.
- Field verification of the P&ID for compressor #2 indicated that the actual equipment was consistent with the P&ID.
- PSV manifold vents discharge at a height of approximately 4-ft. from a near-by work platform. International Institute of Ammonia Refrigeration (IIAR) standard (ANSI/IIAR 2-2008, *Equipment, Design, and Installation of Closed Circuit Ammonia Mechanical Refrigerating Systems*) specifies that relief vent lines be vented to a safe location at least 15-ft. above the adjacent grade or roof level. While the PSV manifold vents are greater than 15-ft. from the ground, they are only approximately 4-ft. from a near-by work platform, thereby potentially exposing employees to an emergency vent release. **See Attachment 1. The facility must evaluate the PSV manifold vent location in light of the ANSI/IIAR 2-2008 requirements and potential for operator exposure, and based on your evaluation, take appropriate action.**

FINDINGS

Process Safety Information (PSI) [40 CFR 68.65]

- ❑ An evaluation of the facility's engine room ventilation system design was not available for review during the inspection. **The facility must ensure that sufficient information regarding ventilation system design is retained, as required by 40**

CFR 68.65 (d)(1)(v). (Violation corrected following the inspection, as evidenced by sufficient ventilation system evaluation, dated May 18, 2011.)

- ❑ The facility retains a document, dated 11/17/94, which provided a list of several industry standards that were consulted during the initial design, fabrication, and installation of the anhydrous ammonia system. However, the anhydrous ammonia system has been expanded several times since 1994, and subsequently, conformance with recognized and generally accepted engineering practices (RAGAGEP) has not been documented for the current anhydrous ammonia system configuration. **The facility must document that equipment complies with RAGAGEP, as required by 40 CFR 68.65(d)(2).**

Standard Operating Procedures (SOPs) [40 CFR 68.69]

- ❑ Detailed and comprehensive SOPs were available for review, however, for older equipment, including air handling units (AHUs) number 1 through 40, there are no equipment specific SOPs. **The facility must ensure that equipment SOPs are prepared for all ammonia refrigeration process equipment normal operations, including AHUs numbered 1 through 40, as required by 40 CFR 68.69(a)(1)(ii).**

Training [40 CFR 68.71]

- ❑ Initial and refresher training consists of several elements; however, initial and refresher training requirements have not been defined by the facility. As a result, there was no documentation indicating that each operator has successfully completed initial and/or refresher training requirements for the facility's anhydrous ammonia system. **The facility must ensure that initial and refresher training is sufficiently documented, as required by 40 CFR 68.71(c).**

ITEM OF CONCERN

Mechanical Integrity [40 CFR 68.73]

- ❑ PSV manifold vents discharge at a height of approximately 4-ft. from a near-by work platform. International Institute of Ammonia Refrigeration (IIAR) standard (ANSI/IIAR 2-2008, *Equipment, Design, and Installation of Closed Circuit Ammonia Mechanical Refrigerating Systems*) specifies that relief vent lines be vented to a safe location at least 15-ft. above the adjacent grade or roof level. While the PSV manifold vents are greater than 15-ft. from the ground, they are only approximately 4-ft. from a near-by work platform, thereby potentially exposing employees to an emergency vent release. **See Attachment 1. The facility must evaluate the PSV manifold vent location in light of the ANSI/IIAR 2-2008 requirements and potential for operator exposure, and based on your evaluation, take appropriate action.**

RECOMMENDATIONS

Registration

- ❑ Because the facility added anhydrous ammonia in June 2010 for charging new equipment in a new perishable warehouse, it is recommended that the facility submit a correction in RMP*^eSubmit to reflect the current maximum anhydrous ammonia storage amount at the facility.

Standard Operating Procedures (SOPs) [40 CFR 68.69]

- ❑ Annual SOP certifications in 2011, 2010, and 2009 state, “I certify that the operating procedures are complete and accurate.” This certification statement is not linked, nor does it reference the actual SOPs duly certified. The facility should consider a more “SOP-specific” annual certification in order to ensure that each SOP is accurate and current.

Management of Change (MOC) [40 CFR 68.75] & Pre-Startup Review (PSR) [40 CFR 68.77]

- ❑ The facility has a program underway to replace all existing solid state ammonia detectors with electrochemical detectors. Facility management explained that they have not completed a MOC for this change. The facility has determined that replacement of solid-state detectors with electrochemical detectors is a replacement-in-kind, and therefore no MOC is required. While the different ammonia detectors have the same design intent, they have different design and operating features. These differences may dictate updates to the facility PSI, Mechanical Integrity, Operator Training, and possibly to SOPs. **For these reasons, the EPA feels that a MOC is appropriate for the replacement of the existing solid state ammonia detectors with electrochemical detectors.**

Incident Investigation [40 CFR 68.81]

- The facility's Incident Investigation procedures reference boiler-plate forms to be completed should an applicable incident occur. These forms were not located with the facility's Incident Investigation procedures. It is recommended that these boiler-plate forms be included with the facility's Incident Investigation procedures so that they are easily available when/if needed.

Contractor Safety [40 CFR 68.87]

- In order to ensure that contractor employees are current in both required certifications and contract owner training requirements, the facility should:
 - 1) request contractor anhydrous ammonia training policies and procedures, and 2)
 - request that contract owners provide the certification status of its employees prior to the beginning of work.